Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

The imitation of a cowry-shell (*Cypræa moneta*) in lime-stone (plate XI, 17) is of great interest, as we have from ancient China a large number of such cowries, both real and reproduced in bone and inscribed. Our knowledge of prehistoric Siberian ceramics is still very unsatisfactory; comprehensive collections are stored up in the Museum of Minusinsk, but not yet published. The Tovostin collection contains only five complete pottery jars and a number of sherds. These jars appear to be reproductions of bronze vessels. I am in perfect agreement with the author in regarding the type of the so-called Scythian kettle as of Central-Asiatic origin, particularly emanating from the region of Minusinsk, and I avail myself of this opportunity to state again that, contrary to what has been asserted by superficial observers, this type meets with no counterpart in China, and that China has nothing to do with its development.

I was but able to touch here on some of the problems suggested by the rich and solid publication of Mr. Tallgren, which it is a pleasure to announce. In a letter he has informed me that after the war he is planning to come to America for a study of our museums; he may be sure that his visit will be warmly welcomed.

B. LAUFER

Hindu Achievements in Exact Science. A Study in the History of Scientific Development. BENOY KUMAR SARKAR. Longmans, Green and Co.: New York, 1918. 82 p.

The ethnologist is always gratified at a book in which the achievements of a people outside the pale of our narrow culture-sphere are vividly and forcibly expounded. Professor Sarkar desires to furnish for popular consumption "some of the chronological links and logical affinities between the scientific investigations of the Hindu and those of the Greeks, Chinese, and Arabs," without going into technical details or relating the migration of ideas. He briefly sets forth, without giving new facts, what the Aryan stock of ancient India has accomplished in mathematics, astronomy, physics, chemistry, metallurgy, medicine, and natural history. Owing to its simple and succinct presentation, his book will doubtless find many readers, and I hope that these will not be confined to students interested in the history of science, but that also many ethnologists will imbibe its lessons, for all science has emerged from the domain of folklore. In making this recommendation, however, it is the reviewer's duty to call attention also to the weak points of the book. Mr. Sarkar does not entirely escape from the exaggerations of the specialist, but, what is far worse, writes from the standpoint of the extreme nationalist. The nationalist movement among the highly educated and intelligent Bengali is in itself an interesting phenomenon, yet, whatever the merits and drawbacks of nationalism may be (many of us who have the progress of mankind at heart are absolutely opposed to it), it must never be wedded to science. The history of science can be written only from the universal, broad-minded, and sympathetic viewpoint of humanity, and it makes no difference to the true humanist whether an idea or discovery is due to India or China, to the Greeks or the Arabs, to the Negroes or the Maya. Apodictic and dogmatic assertions, such as "the Hindu were the first to discover gold," and "the Hindu taught the world the art of extracting iron from the ores" (p. 68) cannot be subscribed to by any one; nor is it true that the Hindu discovered zinc during the fourteenth century; at a much earlier date zinc was extracted from the ore in Sasanian Persia and from that quarter became known in China. Caraka and Suçruta were assuredly great physicians, but it is hardly necessary to praise them at the expense of Galen or to belittle Theophrastus or Pliny. Mr. Sarkar's mind is too full of modern scientific facts and terminology and too prone to interpret and to project these without moderation into the thoughts of the Indians. In natural history,

> considerable power of observation was exhibited, as well as remarkable precision in description, and suggestiveness in expression. Their nature study was oriented to the practical needs of socio-economic life. It was minute and comprehensive, and so far as it went, avoided the fallacies of mal-observation and non-observation. Whatever be the value of the results achieved, the investigation was carried on in a genuine scientific spirit (p. 67).

These exuberant remarks are not warranted by the facts. I shall cite but one example: the ancient Indians classified the rhinoceros among the five-toed animals (cf. M. Chakravarti, Animals in the Inscriptions of Piyadasi); until the dawn of our science of zoölogy it was only the Chinese and the great Al-Beruni who knew correctly that the animal was possessed of three hoofs on each foot. In *The Diamond* (p. 65) I have given a good instance of how the modern Indian school proceeds to claim European discoveries as their own simply by reading into their texts what these do not say, and thus to proclaim the phosphorescence of the diamond as an Indian asset centuries before Boyle.

> India was the greatest industrial power of antiquity. It was the manufactures of the Hindu, which, backed up by their commercial enterprise, served as standing advertisements of India in Egypt, Babylonia, Judaea, Persia, etc. To the Romans of the imperial epoch and the Europeans of the middle ages, also, the Hindu were noted chiefly as a nation of industrial experts.

The mere intimation to conceive the Indians as industrialists and advertisers makes me shiver.

The compass as an early invention of India (p. 38) is adopted from Mookerji, but, as shown by me (this journal, 1917, p. 77), this interpretation rests on a fallacy. There is, moreover, no Sanskrit work which mentions the compass. The invention of gun-powder in India is nothing but a learned fable based on the antedating of recent texts, misunderstandings and misinterpretation of terms, seasoned with a strong dose of imagination and uncritical methods. According to the school to which Mr. Sarkar belongs, chemistry, that is, alchemy, is of perfectly indigenous growth in India: the Hindu chemical investigators of the fifth and sixth centuries A.D. even anticipated by one millennium the work of Paracelsus and Libavius, and the physico-chemical theories as to combustion, heat, chemical affinity, were clearer, more rational, and more original than those of van Helmont or Stahl. In my opinion, alchemy is an Egypto-Hellenistic science, first developed in Egypt in the first centuries preceding our era, and was thence transmitted to India and China.

Mr. Sarkar undervalues the expansion and influence of Hellenism, for he states,

> Every attempt on the part of modern scholars to trace the Hellenic or Hellenistic sources of Hindu learning has been practically a failure (p. 5);

and his patriotism culminates in the dogma,

> India's indebtedness to foreign peoples for the main body of her culture is virtually nil.

This is plainly unsound super-Indianism. My enthusiasm for India is no less than that of our author, but I have been inconsiderate enough to demonstrate that burning-lenses and the puppet-play or marionettes were derived by the Indians from the west; and there is no doubt in the minds of all unbiased students that India, especially as to mechanical inventions, owes a large debt, not to the Greeks, but to Alexandrine-Oriental-Hellenistic civilization of western Asia. I also hope to continue my studies in this direction and to furnish exact evidence for the dependence of Indian alchemy. The Indians, in my estimation, cannot be characterized as an inventive nation. There are many points, particularly as to the evaluation of Indian authors, their works and their dates, in which I am at odds with Mr. Sarkar, but discussions of this nature would require many pages and interest only the orientalist. Taken as a whole, his book is a valuable summary and worth reading.

B. LAUFER